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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/000,323	12/04/2001	Masayuki Mishima	Q67519	9759

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EXAMINER

COLON, GERMAN

ART UNIT PAPER NUMBER

2879

DATE MAILED: 02/28/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/000,323

Applicant(s)

MISHIMA, MASAYUKI

Examiner

German Colón

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-8, 10 and 12-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Fujita et al. (US 5,962,962).

Regarding claim 1, Fujita discloses a method for producing a light-emitting device comprising the steps of disposing a transparent electrode **12**, one or more organic layers **10** and a back side electrode **16** on a substrate **11** to provide a light-emitting structure, and disposing sealing parts **18** on said light-emitting structure to isolate said one or more organic layers from external air, wherein said one or more organic layers comprises a light-emitting layer **14** containing a phosphorescent compound, and said light-emitting layer, said back side electrode and said sealing parts are disposed in an atmosphere where both of a moisture concentration and an oxygen concentration are 100 ppm or less (see Col. 3, lines 40-42; and Col. 6, lines 26 and 29-30).

Regarding claim 2, Fujita discloses said one or more organic layers being isolated from external air after disposing said one or more organic layers until said sealing parts are disposed (see Col. 7, lines 60-67; and Col. 8, lines 28-30).

Regarding claim 3, Fujita discloses both of said moisture concentration and said oxygen concentration being 50 ppm or less (see Col. 3, lines 40-42; and Col. 6, lines 26 and 29-30).

Referring to claim 4, Fujita discloses both of said moisture concentration and said oxygen concentration being 30 ppm or less (see Col. 3, lines 40-42; and Col. 6, lines 26 and 29-30).

Referring to claim 5, Fujita discloses at least one of said organic layers being formed by a wet film-forming method (see Col. 14, lines 15-18).

Referring to claim 6, Fujita discloses said one or more organic layers comprising a hole-injecting layer in contact with said light-emitting layer and said hole-injecting layer over said transparent electrode (see Col. 11, lines 62-65).

Regarding claim 7, Fujita discloses at least both of said hole-injecting layer and said light-emitting layer being formed by a wet film-forming method (see Col. 14, lines 15-18).

Regarding claim 8, Fujita discloses said one or more organic layers further comprising an electron-transporting layer between said light-emitting layer and said back side electrode (see Col. 11, lines 60-61 and 64-65).

Regarding claim 10, Fujita discloses the phosphorescent compound being an ortho-metallation complex (see Col. 12, lines 56-67; Col. 13, lines 1 and 49-62).

Regarding claim 12, Fujita discloses a light-emitting device comprising a transparent electrode **12**; one or more organic layers **10**; a back side electrode **16** forming a light-emitting structure provided on a substrate **11**; and sealing parts **18** on said light-emitting structure to isolate said one or more organic layers from external air, wherein said one or more organic layers comprises a light-emitting layer **14** containing a phosphorescent compound, and said light-emitting layer, said back side electrode and said sealing parts are disposed in an atmosphere where both of a moisture concentration and an oxygen concentration are 100 ppm or less (see Col. 3, lines 40-42; and Col. 6, lines 26 and 29-30). Further, the method of forming the device is

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not germane to the issue of patentability of the device itself; therefore, the limitation of “a device obtained by a method” has not been given patentable weight.

Referring to claims 13-19, claims 13-19 are rejected over the reasons stated in the rejection of claims 2-8, respectively.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 9 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujita (US 5,962,962) in view of Hu et al. (US 5,932,363).

Regarding claim 9, Fujita discloses the claimed light-emitting device with an ortho-metallation complex as a phosphorescent compound, but is silent regarding the limitation of “a weight ratio of said phosphorescent compound in said light-emitting layer is 0.1 to 70 weight % based on the total weight of said light-emitting layer”.

However, in the same field of endeavor, Hu discloses an electroluminescent device with an ortho-metallation complex as a phosphorescent compound where said phosphorescent compound is present in an amount of 0.01 to 10 wt. %, and teaches that with such an amount, improved device performance characteristics (e.g. emission hue and electroluminescent efficiency) may be achieved (see Col. 11, lines 9-16). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the EL device of Fujita

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with the phosphorescent compound in a 0.1 to 10 wt. %, because Hu teaches that with said phosphorescent compound in such an amount, improved device performance characteristics (e.g. emission hue and electroluminescent efficiency) may be achieved.

Referring to claim 20, claim 20 is rejected over the reasons stated in the rejection of claim 9.

5. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fujita et al. (US 5,962,962) in view of Onitsuka et al. (US 6,049,167).

Fujita discloses the claimed invention except for the limitation of “an ultraviolet-hardening resin being used in combination with said sealing parts”. However, in the same field of endeavor, Onitsuka discloses a light-emitting device comprising sealing parts and an UV-hardening resin. Onitsuka teaches that conventional thermosetting adhesives have a cure temperature which give rise to the problem that upon curing of the adhesive, the organic EL multilayer structure can soften and deteriorate its characteristic; in contrast, UV-curing adhesives do not give rise to said problem (see Col. 5, lines 24-30). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide an ultraviolet-hardening resin in the device of Fujita because Onitsuka teaches that conventional thermosetting adhesives have a cure temperature which give rise to the problem that upon curing of the adhesive, the organic EL multilayer structure can soften and deteriorate its characteristic; in contrast, UV-curing adhesives do not give rise to said problem.

Prior Art of Record

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Nishi et al., in U.S. Patent Application Pub. 2002/0034659, discloses a light-emitting device with an ortho-metallation phosphorescent compound in a 5-10 wt. %.

Ooishi, in U.S. Patent No. 6,210,815, discloses an OLED with sealing means comprising a UV-hardening resin.

Ohashi et al., in U.S. Patent No. 5,200,668, discloses a luminescent element comprising an ortho-metallation compound having Ir and porphyrin.

Thompson et al., in U.S. Patent No. 6,413,656, discloses a luminescent element comprising an ortho-metallation compound having platinum and porphyrin.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to German Colón whose telephone number is 703-305-5987. The examiner can normally be reached on Monday thru Friday, from 8:30 to 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on 703-305-4794. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7382 for regular communications and 703-308-7382 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

gc

February 20, 2003


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